

# Makrolon® UV

## Patterned polycarbonate sheet



S Line  
Standard

### Your benefits:

- excellent weathering resistance
- extreme impact strength
- resistance to a wide range of temperatures

**Makrolon® UV** patterned sheets are clear transparent polycarbonate sheets with UV protection on both sides, and a patterned surface. They offer extreme impact strength that exceeds the physical properties of other products of their class. **Makrolon** sheets resist temperatures of -100 to +120 °C.

**Makrolon® UV clear 2099 RH** is a clear transparent sheet with high light transmission, a raindrop pattern on one side, and a haircell pattern on the other side.

**Makrolon® UV clear 2099 P**, sheet has a pearl pattern on one side, and is smooth on the other side.

**Makrolon® UV clear 2099 GX**, sheet has a haircell pattern on one side, and a prism pattern on the other side.

### Applications:

Typical applications for **Makrolon® UV** patterned sheets include lighting fixtures, luminair covers, balcony guards, wall and door partitions. The sheets offer protection against involuntary breakage and wilful destruction. The patterned surfaces offer a solution wherever sight screens are required to let in light.

	Test Conditions	Typical values <sup>(1)</sup>	Unit	Standard
<b>PHYSICAL</b>				
Density		1200	kg/m <sup>3</sup>	ISO 1183-1
Water absorption saturation	water at 23 °C	0.30	%	ISO 62
Water absorption equilibrium	23 °C, 50% relative humidity	0.12	%	ISO 62
Refractive index	Procedure A	1.587	-	ISO 489
<b>MECHANICAL</b>				
Tensile modulus	1 mm/min	2350	MPa	ISO 527-1,-2
Yield stress	> 60 mm/min	> 60	MPa	ISO 527-1,-2
Yield strain	50 mm/min	6	%	ISO 527-1,-2
Nominal strain at break	50 mm/min	> 50	%	ISO 527-1,-2
Flexural modulus	2 mm/min	2350	MPa	ISO 178
Flexural strength	2 mm/min	90	MPa	ISO 178
Charpy impact strength	23 °C, unnotched	non-break	kJ/m <sup>2</sup>	ISO 179-1eU
Charpy impact strength	23 °C, 3 mm, notched	80P	kJ/m <sup>2</sup>	ISO 179-1eA
Izod impact strength	23 °C, 3.2 mm, notched	90P	kJ/m <sup>2</sup>	ISO 180-A
<b>THERMAL</b>				
Vicat softening temperature	50 N, 50°C/h	148	°C	ISO 306
Thermal conductivity	23°C	0.20	W/(m.K)	ISO 8302
Coefficient of linear thermal expansion	23 to 55°C	0.65	10 <sup>-4</sup> /K	ISO 11359-1,-2
Temperature of deflection under load	1.80 Mpa	128	°C	ISO 75-1,-2
Temperature of deflection under load	0.45 Mpa	140	°C	ISO 75-1,-2
<b>ELECTRICAL</b>				
Electrical strength	1 mm	34	kV/mm	IEC 60243-1
Volume resistivity		1E14	Ohm.m	IEC 60093
Surface resistivity		1E16	Ohm	IEC 60093
Relative permittivity	100 Hz	3.1	-	IEC 60250
Relative permittivity	1 MHz	3.0	-	IEC 60250
Dissipation factor	100 Hz	5 10 <sup>-4</sup>	-	IEC 60250
Dissipation factor	1 MHz	95 10 <sup>-4</sup>	-	IEC 60250

<sup>(1)</sup> These values are measured on injection molded samples, and are not intended for specification purposes.

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Exolon Group S-Line, the standard product line, represents a range of certified quality products which offer the reliable solution for most applications.

**Light Transmission:** Test Method according to DIN EN ISO 13468-2  
The stated thicknesses are not all available as standard. Please ask us for more information.  
The stated values are typical values only.

Light transmission in % at 3 mm thickness	Makrolon® UV RH	Makrolon® UV P	Makrolon® UV GX
clear 2099	86	86	86
green 2650	67		
blue 2550	53		
bronze 2850	44		

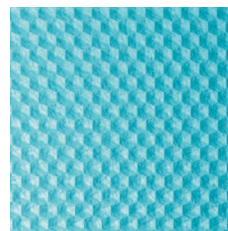
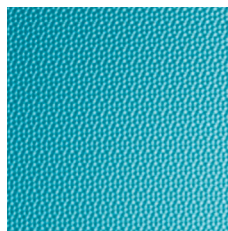
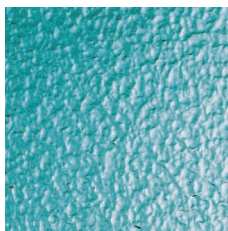
**Available sizes: Makrolon® UV** patterned sheets are available in thicknesses 3 – 6 mm and in following sizes; other sizes, colors and sheet thicknesses on request.

### Colors:

Makrolon® UV clear 2099 P      Makrolon® UV green 2650 R  
Makrolon® UV clear 2099 GX      Makrolon® UV blue 2550 RH  
Makrolon® UV clear 2099 RH      Makrolon® UV bronze 2850 RH

### Patterns:

Makrolon® UV clear 2099 RH      Makrolon® UV clear 2099 P      Makrolon® UV clear 2099 GX



### Sizes (Standard):

3,050 x 2,050 mm (RH)    3,050 x 1,650 mm (P, GX)

**Weathering Resistance: Makrolon® UV** sheets show excellent weathering resistance, which guarantees their impact strength even after many years. Since their introduction in 1989, the sheets have been examined in an intensive test program, including a real-time outdoor exposure test in a southern European climate (Bandol).

**Permanent Service Temperature:** The permanent service temperature without load is approx. 120 °C.

**Glow wire flammability index, IEC 60695-2-12, in °C (°):** Makrolon® UV clear 2099 RH: 960 °C at 3 mm